UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
PUENTE, EMERSON C

ART UNIT	PAPER NUMBER
2113	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
Office Action Summary	10/585,587	WINOKUR, ALEX
	Examiner	**Art Unit**	
	EMERSON C. PUENTE	2113	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>10 July 2006</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-41</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-41</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>10 July 2006</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some *   c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>9/14/06,4/4/07,3/25/09</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

DETAILED ACTION

This action is made Non-Final

Claims 1-41 have been examined.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly
claiming the subject matter which the applicant regards as his invention.

Claims 10,12-16 and 25-40 are rejected under 35 U.S.C. 112, second paragraph,
as being indefinite for failing to particularly point out and distinctly claim the subject
matter which applicant regards as the invention.

Regarding claim 10, the limitations include "wherein transmitting the record" in
lines 2-3 of claim. There is insufficient antecedent basis for this limitation in the claim. It
is unclear whether the limitation is in reference to "transmitting" recited in claim 9 or
"sending the data" recited in base claims. If it is in reference to claim 9, examiner
suggests amending the dependency. Otherwise, examiner suggests amending the
language accordingly.

Regarding claim 12-16, the limitations include "predicting the event'. However,
base claim 1 describes an event occurring. One cannot predict something that has
already occurred. Claims 25-40 are rejected under the same rationale

Furthermore, claim 16 recites "a subset of one or more data sources". This
limitation includes coverage for just one data source. However, one cannot have a
subset of just one data source.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by
another filed in the United States before the invention by the applicant for patent or (2) a patent
granted on an application for patent by another filed in the United States before the invention by the
applicant for patent, except that an international application filed under the treaty defined in section
351(a) shall have the effects for purposes of this subsection of an application filed in the United States
only if the international application designated the United States and was published under Article 21(2)
of such treaty in the English language.

Claims 1,4,5,22,23,24, and 41 are rejected under 35 U.S.C. 102(e) as being

anticipated by US Patent Application No. 2006/007148 of Osaki.

Regarding claim 1, Osaki discloses a method for data protection, comprising:

accepting data for storage from one or more data sources (see figures 1-4 item

13 and paragraph 18).

sending the data for storage in a primary storage device and in a secondary

storage device (see figure 2 and paragraph 21).

while awaiting an indication of successful storage of the data in the secondary

storage device, temporarily storing a record associated with the data in a disaster-proof

storage unit adjacent to the primary storage device (see paragraph 21 "when data is

transferred from the front end volume, a copy of the data is not retained in the front end

volume")

when an event damaging at least some of the data in the primary storage device

occurs, reconstructing the data using the record stored in the disaster-proof storage unit

and at least part of the data stored in the secondary storage device. Osaki discloses a

system for disaster recovery (see paragraph 1). It is understood if a disaster were to

occur at the primary storage site, data at the front end volume would still be able to be

sent to the secondary volume, thus updating or reconstructing the data at the secondary

volume.

Regarding claim 4, Osaki discloses the method according to claim 1, wherein

reconstructing the data comprises retrieving the disaster-proof storage unit following the

event, extracting the record from the disaster-proof storage unit and writing the data

associated with the record to the secondary storage device. Osaki discloses a system

for disaster recovery (see paragraph 1). It is understood if a disaster were to occur at

the primary storage site, data at the front end volume would still be able to be sent to

the secondary volume, thus updating or reconstructing the data at the secondary

volume.

Regarding claim 5, Osaki discloses the method according to claim 4, wherein

writing the data comprises remotely connecting the disaster-proof storage unit to the

secondary storage device (see figure 2 and paragraph 21).

Regarding claim 22, Osaki discloses the method for data protection, comprising:

accepting data from a data source for storage in a primary storage device (see

figures 1-4 item 13 and paragraph 18).

periodically sending the data for backup in a backup storage device by means of a sequence of backup operations (see figure 2 and paragraph 21).

temporarily storing in a disaster-proof storage unit records associated with at least part of the data that is accepted during a time interval between successive backup operations in the sequence (see paragraph 21 "when data is transferred from the front end volume, a copy of the data is not retained in the front end volume")

when an event damaging at least some of the data in the primary storage device occurs during the time interval, reconstructing the data using the records stored in the disaster-proof storage unit. Osaki discloses a system for disaster recovery (see paragraph 1). It is understood if a disaster were to occur at the primary storage site, data at the front end volume would still be able to be sent to the secondary volume, thus updating or reconstructing the data at the secondary volume.

Regarding claim 23, Osaki discloses the method for data protection, comprising:

accepting data for storage from a data source (see figures 1-4 item 13 and paragraph 18).

sending the data for storage in a primary storage device, while mirroring the data in a secondary storage device (see figure 2 and paragraph 21).

temporarily storing at least part of the data in a disaster-proof storage unit at a site of the primary storage device (see paragraph 21 "when data is transferred from the front end volume, a copy of the data is not retained in the front end volume")

when an event damaging at least some of the data in the primary storage device occurs at the site, reconstructing the data using the at least part of the data stored in the disaster-proof storage unit. Osaki discloses a system for disaster recovery (see paragraph 1). It is understood if a disaster were to occur at the primary storage site, data at the front end volume would still be able to be sent to the secondary volume, thus updating or reconstructing the data at the secondary volume.

Regarding claim 24, Osaki discloses the system for data protection, comprising:

one or more data sources, which are arranged to send data for storage (see figures 1-4 item 13 and paragraph 18).

primary and secondary storage devices, which are arranged to hold the data (see figure 2 and paragraph 21).

a disaster-proof storage unit adjacent to the primary storage device, which is arranged to temporarily store a record associated with the data while awaiting an indication of a successful storage of the data in the secondary storage device (see paragraph 21 "when data is transferred from the front end volume, a copy of the data is not retained in the front end volume").

when an event damaging at least some of the data in the primary storage device occurs, to provide the record so as to enable reconstruction of the data using the record stored in the disaster-proof storage unit and at least part of the data stored in the secondary storage device. Osaki discloses a system for disaster recovery (see paragraph 1). It is understood if a disaster were to occur at the primary storage site,

data at the front end volume would still be able to be sent to the secondary volume, thus updating or reconstructing the data at the secondary volume.

Regarding claim 41, Osaki discloses the computer software product for data protection, the product comprising a computer-readable medium, in which program instructions are stored, which instructions, when read by a computer, cause the computer to:

accept data from one or more data sources sent for storage in primary and secondary storage devices (see paragraph 21).

to temporarily store a record associated with the data in a disaster-proof storage unit adjacent to the primary storage device, while awaiting an indication of successful storage of the data in the secondary storage device (see paragraph 21 "when data is transferred from the front end volume, a copy of the data is not retained in the front end volume").

Claims 19-21 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent Application No. 2004/0230352 of Monroe referred hereinafter "Monroe".

Regarding claim 19, Monroe discloses the method for data protection, comprising:

accepting data for storage from one or more data sources (see paragraph 13)

sending the data for storage in a storage device (see paragraph 13);

temporarily storing records associated with at least part of the data that is

relevant to investigation of disaster events in a disaster-proof storage unit (see

paragraph 13);

when an event damaging at least some of the data in the storage device occurs,

investigating the event using the records stored in the disaster-proof storage unit (see

paragraph 13).

Regarding claim 20, Monroe discloses the method according to claim 19,

wherein the at least part of the data that is relevant to investigation of disaster events

comprises at least one of surveillance images, access control information and data

originating from a telephony system (see paragraph 13).

Regarding claim 21, Monroe discloses the method according to claim 19,

wherein the at least part of the data that is relevant to investigation of disaster events

comprises data accepted at a time immediately preceding an occurrence of the event

(see paragraph 13).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Osaki in view of Applicant's Admitted Prior Art referred hereinafter "AAPA".

Regarding claim 2, Osaki discloses the method according to claim 1. However,

Osaki fails to disclose:

wherein temporarily storing the record comprises sending an acknowledgement

to the one or more data sources responsively to a successful caching of the record in

the disaster-proof storage unit, without waiting to receive the indication of the successful

storage of the data in the secondary storage device, so as to reduce a transaction

latency associated with the storage of the data.

However, AAPA discloses it is well known in asynchronous system to send

acknowledgements to the requesting application or source in response to storage of

data in the primary storage device and caching the command in local memory (see

page 8 lines 10-15).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of Osaki and AAPA to send

acknowledgements to the requesting application or source in response to storage of

data in the primary storage device and caching the command in local memory, thus

indicating wherein temporarily storing the record comprises sending an

acknowledgement to the one or more data sources responsively to a successful caching

of the record in the disaster-proof storage unit, without waiting to receive the indication

of the successful storage of the data in the secondary storage device, so as to reduce a

transaction latency associated with the storage of the data. A person of ordinary skill in the art at the time of the invention could have been motivated to combine the teachings because Osaki discloses an asynchronous system (see paragraph 19) and sending acknowledgements to the requesting application or source in response to storage of data in the primary storage device and caching the command in local memory, as per teachings of AAPA (see page 8 lines 10-15), is a well known in asynchronous system for reducing wait times.

Regarding claim 3, Osaki discloses the method according to claim 1. However, Osaki fails to disclose:

wherein temporarily storing the record comprises receiving an acknowledgement from the secondary storage device acknowledging the successful storage of the data in the secondary storage device, and deleting the record from the disaster-proof storage unit responsively to the acknowledgement.

However, AAPA discloses it is well known in asynchronous system to delete cached commands in response to acknowledgements from the secondary storage device (see page 8 lines 10-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Osaki and AAPA to delete cached commands in response to acknowledgements from the secondary storage device, thus wherein temporarily storing the record comprises receiving an acknowledgement from the secondary storage device acknowledging the successful storage of the data in the

secondary storage device, and deleting the record from the disaster-proof storage unit responsively to the acknowledgement. A person of ordinary skill in the art at the time of the invention could have been motivated to combine the teachings because Osaki an asynchronous system that discloses not retaining copies in the front-end volume or buffer when data is stored in the secondary volume, and sending acknowledgements, as per teachings of AAPA (see page 8 lines 15-18), constitute a well known means for informing a system when to delete cache or buffer entries in an asynchronous system.

Claims 1, 3-8,17 and 22-24, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,324,654 of Wahl et al. referred hereinafter "Wahl" in view of US Patent No. 5,623,597 of Kikinis.

Regarding claim 1, Wahl discloses a method for data protection, comprising:

accepting data for storage from one or more data sources (see column 6 lines 15-20).

sending the data for storage in a primary storage device and in a secondary storage device (see column 6 lines 21-25).

while awaiting an indication of successful storage of the data in the secondary storage device, temporarily storing a record associated with the data in a storage unit adjacent to the primary storage device (see column 20 lines 20-25)

However, Wahl fails to explicitly disclose:

a disaster-proof storage, wherein when an event damaging at least some of the data in the primary storage device occurs, reconstructing the data using the record stored in the disaster-proof storage unit and at least part of the data stored in the secondary storage device.

Kikinis discloses a fireproof data safe containing a data storage system and a cooling system for use in protecting stored information from theft, fire, and other catastrophe (see column 3 lines 22-25 and 38-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wahl and Kikinis to have a fireproof safe containing a data storage system and a cooling system for use in protecting stored information from theft, fire, and other catastrophe, thus indicating a disaster proof storage, wherein when an event damaging at least some of the data in the primary storage device occurs, reconstructing the data using the record stored in the disaster-proof storage unit and at least part of the data stored in the secondary storage device. A person of ordinary skill in the art at the time of the invention could have been motivated to combine the teachings because Wahl is concerned with protecting data at time of a disaster (see column 24 lines 20-25) and having the records stored in a fireproof data safe, as per teachings of Kikinis (see column 3 lines 22-25 and 38-40), enables the updates in the writelog to be recovered.

Regarding claim 3, Wahl in view of Kikinis discloses the method according to claim 1. Wahl further discloses wherein temporarily storing the record comprises

receiving an acknowledgement from the secondary storage device acknowledging the

successful storage of the data in the secondary storage device, and deleting the record

from the disaster-proof storage unit responsively to the acknowledgement (see column

19 lines 53-60).

Regarding claim 4, Wahl in view of Kikinis discloses the method according to

claim 1. Wahl in view of Kikinis further discloses wherein reconstructing the data

comprises retrieving the disaster-proof storage unit following the event, extracting the

record from the disaster-proof storage unit and writing the data associated with the

record to the secondary storage device. Kikinis discloses a disaster proof storage (see

column 3 lines 22-25 and 38-40) and Wahl discloses recovering from a disaster (see

column 24 lines 20-25). It is understood the data stored in the disaster proof storage

would have to be retrieved and connected to another system to be recovered.

Regarding claim 5, Wahl in view of Kikinis discloses the method according to

claim 4, wherein writing the data comprises remotely connecting the disaster-proof

storage unit to the secondary storage device. Kikinis discloses a disaster proof storage

(see column 3 lines 22-25 and 38-40) and Wahl discloses recovering from a disaster

(see column 24 lines 20-25). It is understood the data stored in the disaster proof

storage would have to be retrieved and connected to another system to be recovered.

Regarding claim 6, Wahl in view of Kikinis discloses the method according to

claim 1, wherein the disaster-proof storage unit comprises a removable memory device

for holding the record, and wherein reconstructing the data comprises, when the

disaster-proof storage unit is damaged by the event, removing the memory device from the disaster-proof storage unit and installing the memory device in another unit for readout of the record. Kikinis discloses a disaster proof storage (see column 3 lines 22-25 and 38-40) and Wahl discloses recovering from a disaster (see column 24 lines 20-25). It is understood the data stored in the disaster proof storage would have to be retrieved and connected to another system to be recovered.

Regarding claim 7, Wahl in view of Kikinis discloses the method according to claim 1. Wahl further discloses comprising detecting the event using a detection mechanism in the disaster-proof storage unit, and modifying operation of the disaster-proof storage unit responsively to detecting the event (see column 11 lines 32-43).

Regarding claim 8, Wahl in view of Kikinis discloses the method according to claim 7. Wahl further discloses wherein detecting the event comprises detecting at least one of a loss of external electrical power supply and a communication failure at the disaster-proof storage unit (see column 11 lines 32-43).

Regarding claim 17, Wahl in view of Kikinis discloses the method according to claim 1. Wahl further discloses wherein temporarily storing the record comprises avoiding exceeding a memory capacity in the disaster-proof storage unit by matching the memory capacity with at least one of a maximum allowed size of data pending for acknowledgement by the secondary storage device and a maximum number of write commands pending for storage in the secondary storage device (see column 17 lines 53-55).

Regarding claim 22, Wahl discloses the method for data protection, comprising:

accepting data from a data source for storage in a primary storage device (see column 6 lines 15-20).

periodically sending the data for backup in a backup storage device by means of a sequence of backup operations (see column 6 lines 21-25).

temporarily storing in a storage unit records associated with at least part of the data that is accepted during a time interval between successive backup operations in the sequence (see column 20 lines 20-25)

However, Wahl fails to explicitly disclose:

a disaster-proof storage, wherein when an event damaging at least some of the data in the primary storage device occurs during the time interval, reconstructing the data using the records stored in the disaster-proof storage unit.

Kikinis discloses a fireproof data safe containing a data storage system and a cooling system for use in protecting stored information from theft, fire, and other catastrophe (see column 3 lines 22-25 and 38-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wahl and Kikinis to have a fireproof safe containing a data storage system and a cooling system for use in protecting stored information from theft, fire, and other catastrophe, thus indicating a disaster proof storage, wherein when an event damaging at least some of the data in the primary storage device occurs during the time interval, reconstructing the data using the records stored in the disaster-proof storage unit. A person of ordinary skill in the art at the time

of the invention could have been motivated to combine the teachings because Wahl is

concerned with protecting data at time of a disaster (see column 24 lines 20-25) and

having the records stored in a fireproof data safe, as per teachings of Kikinis (see

column 3 lines 22-25 and 38-40), enables the updates in the writelog to be recovered.

Regarding claim 23, Wahl discloses the method for data protection, comprising:

accepting data for storage from a data source (see column 6 lines 15-20).

sending the data for storage in a primary storage device, while mirroring the data

in a secondary storage device (see column 6 lines 21-25).

temporarily storing at least part of the data in a storage unit at a site of the

primary storage device (see column 20 lines 20-25).

However, Wahl fails to explicitly disclose:

a disaster proof storage, wherein when an event damaging at least some of the

data in the primary storage device occurs at the site, reconstructing the data using the

at least part of the data stored in the disaster-proof storage unit.

Kikinis discloses a fireproof data safe containing a data storage system and a

cooling system for use in protecting stored information from theft, fire, and other

catastrophe (see column 3 lines 22-25 and 38-40).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of Wahl and Kikinis to have a fireproof

safe containing a data storage system and a cooling system for use in protecting stored

information from theft, fire, and other catastrophe, thus indicating a disaster proof

storage, wherein when an event damaging at least some of the data in the primary

storage device occurs at the site, reconstructing the data using the at least part of the

data stored in the disaster-proof storage unit. A person of ordinary skill in the art at the

time of the invention could have been motivated to combine the teachings because

Wahl is concerned with protecting data at time of a disaster (see column 24 lines 20-25)

and having the records stored in a fireproof data safe, as per teachings of Kikinis (see

column 3 lines 22-25 and 38-40), enables the updates in the writelog to be recovered.

Regarding claim 24, Wahl discloses the system for data protection, comprising:

one or more data sources, which are arranged to send data for storage (see

column 6 lines 15-20).

primary and secondary storage devices, which are arranged to hold the data (see

column 6 lines 21-25).

a storage unit adjacent to the primary storage device, which is

arranged to temporarily store a record associated with the data while awaiting an

indication of a successful storage of the data in the secondary storage device (see

column 20 lines 20-25),

However, Wahl fails to explicitly disclose:

a disaster proof storage, wherein when an event damaging at least some of the

data in the primary storage device occurs, to provide the record so as to enable

reconstruction of the data using the record stored in the disaster-proof storage unit and

at least part of the data stored in the secondary storage device.

Kikinis discloses a fireproof data safe containing a data storage system and a
cooling system for use in protecting stored information from theft, fire, and other
catastrophe (see column 3 lines 22-25 and 38-40).

It would have been obvious to one of ordinary skill in the art at the time the
invention was made to combine the teachings of Wahl and Kikinis to have a fireproof
safe containing a data storage system and a cooling system for use in protecting stored
information from theft, fire, and other catastrophe, thus indicating a disaster proof
storage, wherein when an event damaging at least some of the data in the primary
storage device occurs, to provide the record so as to enable reconstruction of the data
using the record stored in the disaster-proof storage unit and at least part of the data
stored in the secondary storage device. A person of ordinary skill in the art at the time of
the invention could have been motivated to combine the teachings because Wahl is
concerned with protecting data at time of a disaster (see column 24 lines 20-25) and
having the records stored in a fireproof data safe, as per teachings of Kikinis (see
column 3 lines 22-25 and 38-40), enables the updates in the writelog to be recovered.

Regarding claim 41, Wahl discloses the computer software product for data
protection, the product comprising a computer-readable medium, in which program
instructions are stored, which instructions, when read by a computer, cause the
computer to

accept data from one or more data sources sent for storage in primary and
secondary storage devices (see column 6 lines 15-20).

to temporarily store a record associated with the data in a storage unit adjacent

to the primary storage device, while awaiting an indication of successful storage of the

data in the secondary storage device (see column 20 lines 20-25),

However, Wahl fails to explicitly disclose:

a disaster proof storage

Kikinis discloses a fireproof data safe containing a data storage system and a

cooling system for use in protecting stored information from theft, fire, and other

catastrophe (see column 3 lines 22-25 and 38-40).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of Wahl and Kikinis to have a fireproof

safe containing a data storage system and a cooling system for use in protecting stored

information from theft, fire, and other catastrophe, thus indicating a disaster proof

storage. A person of ordinary skill in the art at the time of the invention could have been

motivated to combine the teachings because Wahl is concerned with protecting data at

time of a disaster (see column 24 lines 20-25) and a fireproof data safe, as per

teachings of Kikinis (see column 3 lines 22-25 and 38-40), constitute as well known

storage means that enables the updates in the writelog to be recovered.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wahl in

view of Kikinis, and in further view of AAPA.

Regarding claim 2, Wahl in view of Kikinis discloses the method according to claim 1. However, Wahl in view of Kikinis fails to disclose:

wherein temporarily storing the record comprises sending an acknowledgement to the one or more data sources responsively to a successful caching of the record in the disaster-proof storage unit, without waiting to receive the indication of the successful storage of the data in the secondary storage device, so as to reduce a transaction latency associated with the storage of the data.

AAPA discloses it is well known in asynchronous system to send acknowledgements to the requesting application or source in response to storage of data in the primary storage device and caching the command in local memory (see page 8 lines 10-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wahl, Kikinis, and AAPA to send acknowledgements to the requesting application or source in response to storage of data in the primary storage device and caching the command in local memory, thus indicating wherein temporarily storing the record comprises sending an acknowledgement to the one or more data sources responsively to a successful caching of the record in the disaster-proof storage unit, without waiting to receive the indication of the successful storage of the data in the secondary storage device, so as to reduce a transaction latency associated with the storage of the data. A person of ordinary skill in the art at the time of the invention could have been motivated to combine the teachings

because Wahl is concerned with returning control to the application or source in response to writing to the local data device and local chronologically sequenced journal storage area (see column 9 lines 7-11) and sending acknowledgements to the requesting application or source in response to storage of data in the primary storage device and caching the command in local memory, as per teachings of AAPA (see page 8 lines 10-15), constitute a suitable well known means to return control.

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wahl in view of Kikinis and in further view of US Patent No. 5,841,768 of Ozluturk et al. referred hereinafter "Ozluturk".

Regarding claim 9, Wahl in view of Kikinis discloses the method according to claim 7. However, Wahl in view of Kikinis fails to explicitly disclose wherein modifying the operation comprises transmitting the record from the disaster-proof storage unit over a wireless communication link.

Ozluturk discloses it is well known applications of wireless communications include cellular phone communications, communications in remote locations, and temporary communications for disaster recovery (see column 1 lines 30-35).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wahl, Kikinis, and Ozluturk wherein modifying the operation comprises transmitting the record from the disaster-proof storage unit over a wireless communication link. A person of ordinary skill in the art at

the time of the invention could have been motivated to combine the teachings because

Wahl discloses a disaster recovery system concerned with transmitting data remotely

(see column 10 lines 15-25) and wireless communication, as per teaching of Ozluturk,

constitute a well known means for communication to remote locations and well as

temporary communication for disaster recovery (see column 1 lines 30-35).

Regarding claim 10, Wahl in view of Kikinis discloses the method according to

claim 7. Wahl in view of Kikinis further discloses wherein temporarily storing the record

comprises storing the record in two or more disaster-proof storage units, and wherein

transmitting the record comprises transmitting two or more different parts of the record

respectively from the two or more disaster-proof storage units so as to shorten a

transmission time of the record (see column 12 lines 30-35).

However, Wahl in view of Kikinis fails to explicitly disclose over respective

wireless links.

Ozluturk discloses it is well known applications of wireless communications

include cellular phone communications, communications in remote locations, and

temporary communications for disaster recovery (see column 1 lines 30-35).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of Wahl, Kikinis, and Ozluturk wherein

transmitting the record from the disaster-proof storage unit is over a wireless

communication link. A person of ordinary skill in the art at the time of the invention could

have been motivated to combine the teachings because Wahl discloses a disaster

recovery system concerned with transmitting data remotely (see column 10 lines 15-25)

and wireless communication, as per teaching of Ozluturk, constitute a well known

means for communication to remote locations and well as temporary communication for

disaster recovery (see column 1 lines 30-35).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wahl in

view of Kikinis and in further view of US Patent No. 7,148,802 of Abbruscato.

Regarding claim 11, Wahl in view of Kikinis discloses the method according to

claim 7, However, Wahl in view of Kikinis fails to explicitly disclose wherein modifying

the operation comprises transmitting a homing signal from the disaster-proof storage

unit, so as to enable location and retrieval of the disaster-proof storage unit.

Abbruscato discloses it is well known to having locator for objects, such as black

box devices that emit homing beacons (see column 1 lines 14-16).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of Wahl, Kikinis, and Abbruscato wherein

the disaster-proof storage unit includes a homing beacon, thus indicating wherein

modifying the operation comprises transmitting a homing signal from the disaster-proof

storage unit, so as to enable location and retrieval of the disaster-proof storage unit. A

person of ordinary skill in the art at the time of the invention could have been motivated

to combine the teachings because Kikinis is concerned with disasters (see column 1

lines 37-40) and homing beacons, as per teachings of Abbruscato, constitute a well

known means to locate disaster proof or black box devices at times of a disaster (see

column 1 lines 14-16).

Claims 12,13,15, 16, 25-31,36, and 38-40 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Wahl in view of Kikinis and in further view of US Patent No.

7,383,405 of Vega et al. referred hereinafter "Vega".

Regarding claims 12, Wahl in view of Kikinis discloses the method according to

claim 1. However, Wahl in view of Kikinis fails to explicitly disclose wherein

reconstructing the data comprises sensing an environmental condition using an

environmental sensor, predicting the event responsively to the sensed environmental

condition, and after predicting the event, transmitting the record from the disaster-proof

storage unit using at least one of a wired connection and a wireless connection.

Vega discloses migrating data after predicting a disaster (see column 3 lines 15-

20).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of Wahl, Kikinis, and Vega, wherein the

system includes the ability to predict a disaster and migrate data to another datacenter

after the predicting, thus indicating wherein reconstructing the data comprises sensing

an environmental condition using an environmental sensor, predicting the event

responsively to the sensed environmental condition, and after predicting the event,

transmitting the record from the disaster-proof storage unit using at least one of a wired

connection and a wireless connection. A person of ordinary skill in the art at the time of

the invention could have been motivated to combine the teachings because Wahl is

concerned disasters (see column 24 line 20) and it is well known to be able to predict

disaster (see column 3 lines 15-20), which enables all data to be migrated, thus allowing

business operations to remain up and running (see column 3 lines 15-25)

Regarding claim 13, Wahl in view of Kikinis and Vega discloses the method

according to claim 12. However, Wahl in view of Kikinis and Vega fails to explicitly

disclose wherein sensing the environmental condition comprises accepting a manual

indication from a user that indicates the event. Official Notice is taken that it is well

known for a user to be aware of a pending disaster. For example, a user could made

aware of an disaster from watching the news or from sensors monitoring conditions at

the site. It would have been obvious to one of ordinary skill in the art at the time the

invention was made wherein a user identifies or senses a disaster, thus indicating

wherein sensing the environmental condition comprises accepting a manual indication

from a user that indicates the event. A person of ordinary skill in the art at the time of

the invention could have been motivated to have a user sense the because Vega is

concerned with predicting disasters such as floods or storms (see column 3 lines 15-25)

and a user constitutes a suitable well known source for identifying or sensing a disaster.

Regarding claim 15, Wahl in view of Kikinis and Vega discloses the method

according to claim 12. Wahl further discloses after predicting the event, refraining from

sending subsequent data for storage in the primary storage device. Wahl describes

recovering from a disaster (see column 24 lines 20-25). It is understood data could not

be sent when there is a disaster.

Regarding claim 16, Wahl in view of Kikinis and Vega discloses the method

according to claim 12, and comprising, after predicting the event, temporarily storing in

the disaster-proof storage unit only subsequent records associated with data originating

from a subset of the one or more data sources. Wahl describes recovering from a

disaster (see column 24 lines 20-25). It is understood data could be stored until the

disaster occurs, indicating temporarily storing data after predicting an event. Wahl

further disclose running applications (see column 6 lines 18-20). In the instance that not

all applications have data stored in the disaster proof storage at time of disaster, then

only a subset of the one or more data sources are being temporarily stored in the

disaster-proof storage unit after predicting the event.

Claim 25 is rejected under the same rationale as claim 12.

Regarding claim 26, Wahl discloses an apparatus for protecting data sent for

storage in primary and secondary storage devices, comprising:

a storage unit, which comprises a memory device contained in the enclosure,

which is arranged to temporarily hold a record associated with the data while awaiting

an indication of successful storage of the data in the secondary storage device (see

column 20 lines 20-25)

However, Wahl fails to explicitly disclose:

a disaster proof storage comprising a disaster-proof enclosure, which is arranged to protect components contained therein against disaster events and a control unit, which is arranged, when an event damaging at least some of the data in the primary storage device occurs, to provide the record so as to enable reconstruction of the data using the record stored in the memory device and at least part of the data stored in the secondary storage device.

a sensor, which is arranged to sense an environmental condition in a vicinity of the primary storage device; and

a protection processor, which is arranged to predict the event responsively to the sensed environmental condition and, responsively to predicting the event, to instruct the disaster-proof storage unit to transmit the record so as to protect the data.

Kikinis discloses a fireproof data safe containing a data storage system and a cooling system for use in protecting stored information from theft, fire, and other catastrophe (see column 3 lines 22-25 and 38-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wahl and Kikinis to have a fireproof safe containing a data storage system and a cooling system for use in protecting stored information from theft, fire, and other catastrophe, thus indicating a disaster proof storage comprising a disaster-proof enclosure, which is arranged to protect components contained therein against disaster events and a control unit, which is arranged, when an event damaging at least some of the data in the primary storage device occurs, to

provide the record so as to enable reconstruction of the data using the record stored in

the memory device and at least part of the data stored in the secondary storage device.

A person of ordinary skill in the art at the time of the invention could have been

motivated to combine the teachings because Wahl is concerned with protecting data at

time of a disaster (see column 24 lines 20-25) and having the records stored in a

fireproof data safe, as per teachings of Kikinis (see column 3 lines 22-25 and 38-40),

enables the updates in the writelog to be recovered.

Furthermore, Vega discloses migrating data after predicting a disaster (see

column 3 lines 15-20).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of Wahl, Kikinis, and Vega, wherein the

system includes the ability to predict a disaster and migrate data to another datacenter

after the predicting, thus indicating a sensor, which is arranged to sense an

environmental condition in a vicinity of the primary storage device and a protection

processor, which is arranged to predict the event responsively to the sensed

environmental condition and, responsively to predicting the event, to instruct the

disaster-proof storage unit to transmit the record so as to protect the data. A person of

ordinary skill in the art at the time of the invention could have been motivated to

combine the teachings because Wahl is concerned disasters (see column 24 line 20)

and it is well known to be able to predict disaster (see column 3 lines 15-20), which

enables all data to be migrated, thus allowing business operations to remain up and

running (see column 3 lines 15-25)

Regarding claim 27, Wahl in view of Kikinis, and Vega discloses the apparatus according to claim 26. Wahl further discloses wherein the control unit is arranged to delete the record from the memory device responsively to an acknowledgement from the secondary storage device acknowledging the successful storage of the data in the secondary storage device (see column 19 lines 53-60).

Regarding claim 28, Wahl in view of Kikinis, and Vega discloses the apparatus according to claim 26, Wahl further discloses wherein the control unit is arranged to communicate with the secondary storage device in order to provide the record so as to reconstruct the data (see column 19 lines 53-60).

Regarding claim 29, Wahl in view of Kikinis and Vega discloses the apparatus according to claim 26, wherein the memory device comprises at least one of a non-volatile memory device and a removable memory device (see column 2 lines 50-55).

Regarding claim 30, Wahl in view of Kikinis and Vega discloses the apparatus according to claim 26. Wahl further discloses wherein the control unit comprises a detection mechanism for detecting the event, and wherein the control unit is arranged to modify operation of the disaster-proof storage unit responsively to detecting the event (see column 11 lines 32-43).

Regarding claim 31, Wahl in view of Kikinis and Vega discloses the apparatus according to claim 30, Wahl further discloses wherein the detection mechanism is arranged to detect at least one of a loss of external electrical power supply and a communication failure at the disaster-proof storage unit (see column 11 lines 32-43).

Regarding claim 36, Wahl in view of Kikinis and Vega discloses the apparatus according to claim 26, However, Wahl in view of Kikinis and Vega fails to explicitly disclose wherein the sensor is arranged to accept a manual indication from a user so as to predict the event. Official Notice is taken that it is well known for a user to be aware of a pending disaster. For example, a user could made aware of an disaster from watching the news or from sensors monitoring conditions at the site. It would have been obvious to one of ordinary skill in the art at the time the invention was made wherein a user identifies or senses a disaster, thus indicating wherein sensing the environmental condition comprises accepting a manual indication from a user that indicates the event. A person of ordinary skill in the art at the time of the invention could have been motivated to have a user sense the because Vega is concerned with predicting disasters such as floods or storms (see column 3 lines 15-25) and a user constitutes a suitable well known source for identifying or sensing a disaster.

Regarding claim 38, Wahl in view of Kikinis and Vega discloses the method according to claim 26. Wahl further discloses wherein the data is accepted from one or more data sources, and wherein the protection processor is arranged to control a rate of the data accepted from the one or more data sources after predicting the event (see column 17 lines 53-55).

Regarding claim 39, Wahl in view of Kikinis and Vega discloses the apparatus according to claim 26. Wahl further discloses wherein the data is accepted from one or more data sources, and wherein the protection processor is arranged to send for temporary storage in the disaster-proof storage unit only subsequent records associated

with data originating from a subset of the one or more data sources after predicting the

event. Wahl describes recovering from a disaster (see column 24 lines 20-25). It is

understood data could be stored until the disaster occurs, indicating temporarily storing

data after predicting an event. Wahl further disclose running applications (see column 6

lines 18-20). In the instance that not all applications have data stored in the disaster

proof storage at time of disaster, then only a subset of the one or more data sources are

being temporarily stored in the disaster-proof storage unit after predicting the event.

Regarding claim 40, Wahl in view of Kikinis and Vega discloses the method

according to claim 26. Wahl further discloses wherein a capacity of the memory device

is matched to a maximum allowed size of data pending for acknowledgement by the

secondary storage device so as to avoid exceeding the memory capacity (see column

17 lines 53-55).

Claims 14 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Wahl in view of Kikinis and Vega and in further view of AAPA.

Regarding claim 14, Wahl in view of Kikinis and Vega discloses the method

according to claim 12. Wahl further discloses, after predicting the event, refraining from

sending subsequent acknowledgement messages so as to avoid accepting additional

data from the one or more data sources. Wahl describes recovering from a disaster

(see column 24 lines 20-25). It is understood data could not be sent when there is a

disaster, and as such, no acknowledgements.

However, Wahl in view of Kikinis and Vega fails to explicitly disclose wherein temporarily storing the record comprises sending an acknowledgement message responsively to a successful storage of the record in the disaster-proof storage unit.

AAPA discloses it is well known in asynchronous system to send acknowledgements to the requesting application or source in response to storage of data in the primary storage device and caching the command in local memory (see page 8 lines 10-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wahl, Kikinis, and AAPA to send acknowledgements to the requesting application or source in response to storage of data in the primary storage device and caching the command in local memory, thus indicating wherein temporarily storing the record comprises sending an acknowledgement to the one or more data sources responsively to a successful caching of the record in the disaster-proof storage unit, without waiting to receive the indication of the successful storage of the data in the secondary storage device, so as to reduce a transaction latency associated with the storage of the data. A person of ordinary skill in the art at the time of the invention could have been motivated to combine the teachings because Wahl is concerned with returning control to the application or source in response to writing to the local data device and local chronologically sequenced journal storage area (see column 9 lines 7-11) and sending acknowledgements to the requesting application or source in response to storage of data in the primary storage

device and caching the command in local memory, as per teachings of AAPA (see page 8 lines 10-15), constitute a suitable well known means to return control.

Claim 37 is rejected under the same rationale as claim 14.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wahl in view of Kikinis and in further view of US Patent No. 6,105,078 of Crockett et al. referred hereinafter "Crockett".

Regarding claim 18, Wahl in view of Kikinis discloses the method according to claim 1. However, Wahl in view of Kikinis fails to explicitly disclose wherein temporarily storing the record comprises including in the record additional information related to the data, the additional information comprising at least one of an address of an originating data source, an address of the primary storage device, a time stamp indicating an acceptance time of the data and a storage address intended for the data in the primary storage device.

Crockett discloses a timestamp control placed in journals (see column5 lines 30-35).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wahl, Kikinis, and Crockett to further include a timestamp control in the journal, thus indicating wherein temporarily storing the record comprises including in the record additional information related to the data, the additional information comprising at least one of an address of an originating data

source, an address of the primary storage device, a time stamp indicating an

acceptance time of the data and a storage address intended for the data in the primary

storage device. A person of ordinary skill in the art at the time of the invention could

have been motivated to combine the teachings because Wahl is concerned with a

transmitting data remotely (see column 2 lines 45-55) and timestamps, as per teachings

of Crockett, ensure that entries or data are successfully written (see column 5 lines 30-

35).

Claims 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Wahl in view of Kikinis and Vega and in further view of Ozluturk.

Regarding claim 32, Wahl in view of Kikinis and Vega discloses the method

according to claim 30. However, Wahl in view of Kikinis and Vega fails to explicitly

disclose wherein the disaster-proof storage unit further comprises a wireless transmitter,

which is arranged to transmit the record from the disaster-proof storage unit

responsively to detecting the event.

Ozluturk discloses it is well known applications of wireless communications

include cellular phone communications, communications in remote locations, and

temporary communications for disaster recovery (see column 1 lines 30-35).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of Wahl, Kikinis, Vega and Ozluturk

wherein the disaster-proof storage unit further comprises a wireless transmitter, which is

arranged to transmit the record from the disaster-proof storage unit responsively to

detecting the event. A person of ordinary skill in the art at the time of the invention could have been motivated to combine the teachings because Wahl discloses a disaster recovery system concerned with transmitting data remotely (see column 10 lines 15-25) and wireless communication, as per teaching of Ozluturk, constitute a well known means for communication to remote locations and well as temporary communication for disaster recovery (see column 1 lines 30-35).

Regarding claim 33, Wahl in view of Kikinis, Vega, and Ozluturk discloses the method according to claim 32. Wahl further discloses wherein the disaster-proof storage unit is one of two or more disaster-proof storage units, which are arranged to transmit respectively two or more different parts of the record over respective links so as to shorten a transmission time of the record (see column 12 lines 30-35) and Ozluturk discloses wherein the links are wireless (see column 1 lines 30-35).

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wahl in view of Kikinis and Vega and in further view of Abbruscato.

Regarding claim 34, Wahl in view of Kikinis discloses the method according to claim 30, However, Wahl in view of Kikinis fails to explicitly disclose wherein modifying the operation comprises transmitting a homing signal from the disaster-proof storage unit, so as to enable location and retrieval of the disaster-proof storage unit.

Abbruscato discloses it is well known to having locator for objects, such as black box devices that emit homing beacons (see column 1 lines 14-16).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wahl, Kikinis, and Abbruscato wherein the disaster-proof storage unit includes a homing beacon, thus indicating wherein modifying the operation comprises transmitting a homing signal from the disaster-proof storage unit, so as to enable location and retrieval of the disaster-proof storage unit. A person of ordinary skill in the art at the time of the invention could have been motivated to combine the teachings because Kikinis is concerned with disasters (see column 1 lines 37-40) and homing beacons, as per teachings of Abbruscato, constitute a well known means to locate disaster proof or black box devices at times of a disaster (see column 1 lines 14-16).

Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wahl in view of Kikinis, Vega, and in further view of Crockett.

Regarding claim 35, Wahl in view of Kikinis and Vega discloses the method according to claim 26. However, Wahl in view of Kikinis and Vega fails to explicitly disclose wherein the record comprises additional information related to the data, the additional information comprising at least one of an address of an originating data source, an address of the primary storage device, a time stamp indicating an acceptance time of the data and a storage address intended for the data in the primary storage device.

Crockett discloses a timestamp control placed in journals (see column 5 lines 30-35).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wahl, Kikinis, Vega and Crockett to further include a timestamp control in the journal, thus indicating wherein the record comprises additional information related to the data, the additional information comprising at least one of an address of an originating data source, an address of the primary storage device, a time stamp indicating an acceptance time of the data and a storage address intended for the data in the primary storage device. A person of ordinary skill in the art at the time of the invention could have been motivated to combine the teachings because Wahl is concerned with a transmitting data remotely (see column 2 lines 45-55) and timestamps, as per teachings of Crockett, ensure that entries or data are successfully written (see column 5 lines 30-35).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EMERSON C. PUENTE whose telephone number is (571)272-3652. The examiner can normally be reached on 9-6 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on 571-272-3645. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Emerson C Puente/
Primary Examiner, Art Unit 2113